

## AMENDMENTS TO THE CLAIMS

- 1           1.       (original) A flexible circuit comprising:  
2                   a substrate having a plane;  
3                   a flexible and extensible structure formed within said substrate and co-planar with  
4   said substrate; and  
5                   wherein said structure is adapted to be extended out of said plane by a distance  
6   greater than a maximum lateral dimension of said structure.
- 1           2.       (original) The flexible circuit according to Claim 1 further comprising a pathway  
2   formed on said structure.
- 1           3.       (original) The flexible circuit according to Claim 2, wherein said pathway is a  
2   capillary for transferring a fluid.
- 1           4.       (original) The flexible circuit according to Claim 2, wherein said pathway is an  
2   electrical lead for transferring an electronic signal.
- 1           5.       (original) The flexible circuit according to Claim 2, wherein said pathway is an  
2   electrical lead for transferring an electrical signal.
- 1           6.       (original) The flexible circuit according to Claim 2, wherein said pathway is an  
2   optical fiber for transferring an optical signal.
- 1           7.       (original) The flexible circuit according to Claim 6, wherein bending radii of said  
2   optical fiber are large enough to prevent substantial optical loss from said optical fiber.

1           8.       (original) The flexible circuit according to Claim 1, wherein said structure is a  
2 spiral.

1           9.       (original) The flexible circuit according to Claim 8, wherein said spiral is an  
2 Archimedes spiral.

1           10.      (original) The flexible circuit according to Claim 8, wherein said spiral is a  
2 parabolic spiral.

1           11.      (original) The flexible circuit according to Claim 8, wherein said spiral is a  
2 polygonal spiral.

1           12.      (original) The flexible circuit according to Claim 11, wherein said spiral is one of  
2 a square spiral, a triangular spiral, a pentagonal spiral and a hexagonal spiral.

1           13.      (original) The flexible circuit according to Claim 1, wherein said structure has  
2 geometric features selected from a group comprising spiral, bend, curve, twist, turn, curl, loop, u-  
3 turn and zig-zag.

1           14.      (original) The flexible circuit according to Claim 1, wherein said structure is  
2 defined by perforations.

1           15.      (original) The flexible circuit according to Claim 1, wherein said structure  
2 comprises a boss for receiving a force to extend said structure out of said plane.

1           16.      (original) The flexible circuit according to Claim 1 further comprising at least a  
2 first pathway and a second pathway.

1           17.     (original) A flexible circuit comprising:  
2                     a substrate having a plane;  
3                     a flexible and extensible structure formed within said substrate and co-planar with  
4     said substrate, said flexible and extensible structure is adapted to be extended out of said plane  
5     by a distance greater than a maximum lateral dimension of said structure; and  
6                     a pathway on said structure.

1           18.     (original) The flexible circuit according to Claim 17, wherein said pathway is a  
2     capillary for transferring a fluid.

1           19.     (original) The flexible circuit according to Claim 17, wherein said pathway is an  
2     electrical lead for transferring an electronic signal.

1           20.     (original) The flexible circuit according to Claim 17, wherein said pathway is an  
2     optical fiber for transferring an optical signal.

1           21.     (original) The flexible circuit according to Claim 20, wherein bending radii of  
2     said optical fiber are large enough to prevent substantial optical loss from said optical fiber.

1           22.     (original) The flexible circuit according to Claim 17, wherein said structure is a  
2     spiral.

1           23.     (amended) The flexible circuit according to Claim 22, wherein said spiral is an  
2     Archimedes spiral.

1           24.     (original) The flexible circuit according to Claim 22, wherein said spiral is a  
2     parabolic spiral.

1           25.     (original) The flexible circuit according to Claim 22, wherein said spiral is a  
2 polygonal spiral.

1           26.     (original) The flexible circuit according to Claim 25, wherein said spiral is one of  
2 a square spiral, a triangular spiral, a pentagonal spiral and a hexagonal spiral.

1           27.     (original) The flexible circuit according to Claim 17, wherein said structure has  
2 geometric features selected from a group comprising spiral, bend, curve, twist, turn, curl, loop, u-  
3 turn and zig-zag.

1           28.     (original) The flexible circuit according to Claim 17, wherein said structure is  
2 defined by perforations.

1           29.     (amended) The flexible circuit according to Claim 17, wherein said structure  
2 comprises a boss for receiving a force to extend said structure out of said plane.

1           30.     (original) The flexible circuit according to Claim 17 further comprising a second  
2 pathway on said structure.

1           31–36.   (cancelled)

1           37.     (new) A flexible circuit comprising:

2                   a substrate having a plane;

3                   a flexible and extensible structure formed within said substrate and co-planar with  
4 said substrate; and

5                   wherein said structure is adapted to be extended substantially perpendicular to  
6 said plane within the region defined by said plane.

1           38.    (new) The flexible circuit according to Claim 37 further comprising a pathway  
2   formed on said structure.

1           39.    (new) The flexible circuit according to Claim 37, wherein said structure is a  
2   spiral.